



# U.S. ARMY ECONOMIC ANALYSES FOR HISTORIC BUILDINGS

The Department of the Army manages some 14,000 historically significant buildings that are listed on the National Register of Historic Places, or are eligible for listing. These buildings are subject to the National Historic Preservation Act (NHPA). There are approximately 30,000 additional buildings in the Army inventory that are at least 50 years old and are also subject to NHPA. Over the next 30 years, these numbers will increase substantially, as almost 50,000 Cold War-era buildings will meet NHPA requirements.

The Army is addressing this management challenge through several means, including historic building economic analyses. Two computer programs can be used to assess different options for historic facilities – the Layaway Economic Analysis program and the Window Econometric program. Certainly more than economics should be considered when decisions about historic buildings are being made. Nevertheless, economics serve as a crucial starting point; they yield results that can be easily understood and compared.



*Aerial view of the 4400 block, Edgewood Area, Aberdeen Proving Ground, MD – WWI Barracks Historic District, reused as offices for the Army Environmental Center*

## LAYAWAY ECONOMIC ANALYSIS (LEA) SOFTWARE PROGRAM

Layaway Economic Analysis is a computer program that provides cost estimates for the three principal management alternatives for historic buildings:

- renovation and reuse;
- layaway and/or mothballing; and
- demolition.

Based on information provided by the user, the program compares the expense of each alternative over a 20-year period, and summarizes the results in a report format that can then be printed or imported into other programs.

Deciding what to do with an underutilized, outdated, or excess facility is difficult. Even if the facility will be needed in the future, there almost always comes a time when replacement is the best alternative. If an unneeded facility remains in existence for too long, valuable resources will have been used for its maintenance - resources that could have been used more effectively elsewhere.

The LEA allows Army managers to analyze:

- the cost of each alternative over the life-cycle of the building;
- the possible alternatives and additional costs incurred; and
- the point at which one alternative becomes a more viable option.

## WINDOW ECONOMETRIC COMPUTER PROGRAM

The repair and replacement of windows in historic buildings is one of the most significant and persistent issues installation managers face. The Window Econometric computer program is designed to provide life-cycle cost comparisons associated with the repair and/or replacement of windows.

Based on specific information, such as project and location, the program determines the fuel cost, climate, and area cost factor fields, including variations in labor, material, and construction costs, for the specified location.

The Window Econometric program also addresses building characteristics, including age, energy efficiency, and average seasonal indoor temperatures.

Current window types associated with the building are then identified with characteristics such as size, materials, type, fit, and condition specified according to guidance the program provides.

Once this information has been compiled, the Window Econometric program analyzes repair or replacement in several different sce-

narios. Options range from minimal repair, such as painting and weather stripping, to complete replacement.

The program's report section reviews, assembles, and displays in table format comparison costs for each scenario. The report takes into account up-front project costs, energy savings, and life-cycle maintenance costs for each alternative. The results help the manager determine the most cost-effective and beneficial solution for the life-cycle of the windows.



*Fort Sam Houston, TX*



*Historic window, Aberdeen Proving Ground, MD*

## **FOR MORE INFORMATION**

For copies of the economic analyses programs on CD-ROM, contact the U.S. Army Environmental Center's Technical Information Center at  
**1-800-USA-3845**

For more information about Army cultural resources management, visit the Conservation section of the U.S. Army Environmental Center's Web site at  
**<http://aec.army.mil>**.